

## **Appendix G**

### **Freds Fire Reforestation Project**

### **Response to Comments**

**Commentor: Kathleen M. Goforth, Manager, Environmental Review Office, United States Environmental Protection Agency**

**Additional Aquatic Toxicity Data and Analysis**

**Improve Aquatic Toxicity Data.** The 50% lethal concentration (LC50) levels in Table 3-30 and 3-31 do not appear comprehensive. The Forest Service should review EPA's ECOTOX database (<http://cfpub.epa.gov/ecotox>) for aquatic toxicity values. For example, ECOTOX contains over 1300 acute and chronic toxicity values for nonylphenol for a wide range of plant, vertebrate and invertebrate species. The Forest Service should evaluate the most appropriate values for comparison to the expected concentrations based on Water Contamination Rates shown in Tables 3-17a and 3-17b.

Recommendation: The FEIS should review the ECOTOX database for additional toxicity data for herbicides, surfactants, and additives, and compare appropriate toxicity data with water contamination rates.

**Response:**

Tables 3-30 and 31 in the DEIS are a summary of the general chemical characteristics of the herbicides and additives proposed for use and include summaries of some of the relevant studies in the open literature and in the National and Regional risk assessments. In many cases the toxicity values presented in Table 3-30 and 31 are not the toxicity values used to characterize risk to aquatic species. The toxicity values used to characterize risk to aquatic species are displayed in Tables 3-32 to 3-36 of the DEIS. In order to clarify the toxicity values used to characterize risk, we have removed Tables 3-30 and 3-31 from the FEIS.

The toxicity values used to characterize risk to aquatic species are based on the analysis contained in peer-reviewed National (SERA 2003a, 2003b, 2004a, 2004b, 2005) and Regional (USDA 2003a) risk assessments referenced in this FEIS. These toxicity values from the National and Regional risk assessments are determined following a thorough review and analysis of available toxicological studies to determine the potential effects of the herbicides and additives and are the basis for analysis of risk to human health, and terrestrial and aquatic species potentially affected by the project. The information in these risk assessments is, in some cases, supplemented with additional studies (Trumbo, 2005, Mann and Bidwell, 2000) or information (Regional water monitoring data).

We have not found any published information, nor has the EPA indicated any published information, that would lead us to believe that the toxicity values used to assess the risk to aquatic species in this FEIS would need to be changed. Our risk assessments are not intended to be encyclopedic in nature, as it is recognized that there are many studies

available for review. However, our risk assessments do cover the breadth of available data such that it is not necessary to include all available studies. In this case, EPA has not provided us with information on what specific toxicity information appears to be incorrect.

For clarification (FEIS, page 180) there is sufficient information in the literature to make the assumption that in a forested environment, contamination of surface water is more likely to involve nonylphenol polyethoxylate in the short-term and short-chain carboxylates (NP1EC, NP2EC) in the longer-term. As such, indicators of risk (Tables 3-20f-1, 3-20f-2, 3-35, and 3-47) are based upon these two compounds, not nonylphenol.

Using the Best Management Practices prescribed for this project we expect the water contamination rates to be lower than the short and long term water contamination rates shown in Tables 3-18a and 3-18b. This is based on water monitoring conducted in the Pacific Southwest Region since 1991, involving glyphosate, triclopyr, and hexazinone, which has not shown levels of water contamination as high as [the estimated water contamination rates in Tables 3-18a and 3-18b for normal (i.e., not accidental) applications.

### **Future Herbicide Limitations**

**Review potential future herbicide use limitations posted by EPA.** Recommendation: The Forest Service should review EPA's website (<http://www.epa.gov/oppead1/endanger/litstatus/effects/>) to ensure additional limitations have not been placed on pesticides planned for use.

#### Response:

The Aquatic Species Biological Assessment/Evaluation for the Freds Fire Reforestation Project determined that the herbicides proposed for use in Alternative 1 would have no effect on any of the threatened, endangered, proposed, and candidate species that may be present on the Eldorado National Forest.

As stated in the Aquatic Species Biological Evaluation/Assessment) there is no suitable habitat in the project area for the California red-legged frog (CRLF) or salmonid species. These are the species groups that EPA has entered into consultation with the Fish and Wildlife Service and the National Marine Fisheries Service on the effects of glyphosate (CRLF), hexazinone (CRLF), and triclopyr BEE (CRLF and salmonids). Therefore any potential future use limitations based on EPA's ongoing consultation efforts will not affect this project.

We have reviewed this website for additional limitations on the pesticides planned for use. Status changes for any of the herbicides planned for use would be analyzed in accordance with Forest Service Handbook 1909.15, Section 18 [Correction, Supplementation, or Revision of Environmental Documents and Reconsideration of Decisions to take Action].

### **Clarification of Herbicide Use**

**Clarify Comparison of Alternatives Table.** Recommendation: We recommend the Comparison of Alternatives Table more accurately reflect the discussion of the DEIS.

Response: This table has been revised as per EPA's comments.

**State the EPA Registration Number of any products anticipated to be used for the project.**

Recommendation: The FEIS should state the EPA Registration Number of any products anticipated to be used for the project.

Response:

The FEIS does not state EPA registration numbers for the chemicals proposed for use. As described in Table 2-3 of the FEIS, herbicide formulations, and not trade names, are proposed for use. Different herbicide formulations have different EPA Registration Numbers. The FEIS contains product labels that are examples of one or more formulation that will be used in the Freds Fire Reforestation Project area under Alternative 1.

Recommendation: The pesticides used must be registered with EPA and the California Department of Pesticide Regulation and used according to the label directions and Federal and State pesticide laws (Executive Order 12088).

Recommendation: Since the regulatory status of chemicals can change, a review of the current status of all herbicides considered for use should be conducted prior to each application season.

Response:

It is Forest Service Policy to use only those pesticide products registered by the U.S. Environmental Protection Agency and appropriate State agencies and to use them according to all label directions (Forest Service Handbook 2109.14, Chapter 15.1).

As described under Best Management Practice 5-8 (FEIS, page 29), "Label directions will be followed on all pesticides, dyes, and adjuvants. All pesticide applications will adhere to all appropriate laws and regulations governing the use of pesticides, as required by the U.S. Environmental Protection Agency, the California Department of Pesticide Regulation, CalEPA regulations and safety regulations, and Forest Service policy pertaining to pesticide-use.

## **Climate Change**

**Describe climate change and its effects on forest management practices, habitat, and biodiversity.** Recommendation: We recommend the FEIS include a detailed description of climate change and its implications for effective management of forest resources and the ability to meet the requirement of the Forest Land and Resources Management Plan. For example, describe and evaluate projected climate change consequences, such as frequency of high intensity storms, amplified rain events, and the severity and frequency of insect outbreaks, droughts, and fire seasons, and their effects on the success of reforestation efforts and adaptive forest management.

Response: The Forest reviewed the following climate change documents:

- "State of Knowledge." Environmental Protection Agency (2007)

- Climate Change; Health and Environmental Effects: Forests. Environmental Protection Agency <http://epa.gov/climatechange/effects/forests.html#ref>
- Climate Change Considerations in Project Level NEPA Analysis. U.S. Forest Service (2009)
- Draft 2009 Climate Action Team Biennial Report to the Governor and Legislature (March 2009)
- Silviculture and Forest Management under a Rapidly Changing Climate (USFS GTR-203, 2007)

According to EPA (2007), some elements of climate change are known with near certainty:

- Human activities are changing the composition of Earth's atmosphere
- Atmospheric buildup of CO<sub>2</sub> and other greenhouse gases is largely the result of human activities,
- An "unequivocal" warming trend of about 1.0 to 1.7 F occurred from 1906-2005.
- Major greenhouse gases emitted by human activities remain in the atmosphere for periods ranging from decades to centuries. It is therefore virtually certain that atmospheric concentrations of greenhouse gases will continue to rise over the next few decades.
- Increasing greenhouse gas concentrations tend to warm the planet.

However, it is uncertain how much warming will occur, how fast that warming will occur, and how the warming will affect the rest of the climate system including precipitation patterns (EPA (2007)). The intensity and severity of these effects of these are expected to vary regionally and even locally, making any discussion of potential site-specific effects of global climate change on forest resources speculative.

The activities proposed under this project are short-term and are projected to be completed within ten years. For many resources the projected effects of the alternatives are short-term. Many highly conservative scenarios were used to frame the extent of potential environmental conditions in the project area. For example, a worst-case thunderstorm scenario for hydrologic effects, upper estimates of herbicide rates, exposure, and water contamination rates to analyze effects to human, aquatic, and terrestrial species, and extreme fire risk and very high fire hazard for fire effects. Use of these methods would likely encompass the range of environmental conditions, including effects of climate change, in the short-term.

Short-term relationship of soil and water resources to potential frequency of high intensity storms, and amplified rain events:

**Soil Quality** -The effects of the project on soils were evaluated in terms of the Soil Quality Standards of Forest Service Region 5 (FSH R5 Supplement No. 2509.18-95-1). Based on the current cover and growth projections, soil cover should be sufficient to meet soil quality standards and protect against soil loss under all Alternatives. Monitoring efforts have shown that soil cover is maintained at adequate levels after herbicide treatments to prevent accelerated erosion (FEIS page 130-132).

**Water Quality-** The effects of the project on Hydrology and Water Resources were evaluated, including a worst-case scenario or a large thunderstorm that quickly erodes sediment containing herbicides directly into a stream or water body (FEIS page 148).

**Water Contamination- Domestic use** – Modeling results using the SERA risk assessments - even assuming worse-case conditions - show that the concentration of glyphosate of East and West Kyburz Creeks, as well as all perennial streams in the project area), is less than the MCL of 700 ppb. There is additional evidence (Wood 2001) that indicates that even the “worse-case” thunderstorm scenario still poses a low risk to water quality (FEIS page 147).

**Water Contamination-Aquatic Species** - There is low overall risk (Hazard Quotient <1) to aquatic species from normal operations using project design features. Where Peak Estimated Environmental Concentrations result in a Hazard Quotient greater than one (several scenarios for hexazinone and triclopyr) stream buffers were included in the project design to reduce the risk that these chemicals would result in effects to aquatic species.

**Sedimentation** - In the short-term (less than 10 years), there may be a negligible or slight increase in the amount of sediment delivered to streams during and immediately after storm events. The current amount of sediment delivered to streams during large storm events - which is currently high - would likely overshadow any slight increase in sediment delivery to streams that would result from all alternatives. All State standards for suspended sediment and turbidity (Appendix C) will be met because of the small total amount of ground disturbance and high ground cover near streams under all the alternatives (FEIS, page 152-153) In the long-term, the difference between all the alternatives is negligible. Once the project is completed, the amount of vegetation in disturbed areas will increase - this will minimize erosion and sediment delivery to streams.

Best Management Practices and Soil Quality Standards used of this project, and by the Forest Service in Region 5, are designed to protect resources in the long-term.

Short-term relationship of fire and fuels to potential for increased length and severity of fire seasons:

**Fire seasons** - The project area is currently in an area predominantly classified as extreme fire risk and very high fire hazard (FEIS page 45). Thus, the fire effects were analyzed under conditions of extreme fire risk and very high fire hazard.

Under extreme fire risk and very high fire hazard conditions Alternative 1 would create fuel profiles in the project area into the future that would result in relatively easy control of any fires throughout the majority of the year. The increased ability of fire suppression provides the greatest probability of seedling survival. While any small conifer within a likely fire will probably not survive, the ability to contain fires at a smaller size increases the probability of seedling survival across the landscape.

Alternative 2 would develop a fuel complex in the longer term with rapid rates of spread and a higher resistance to control across the landscape. This fuel complex would make the deployment of suppression resources on ridgetops dangerous and ineffective. It would also decrease the effectiveness of suppression resources behind the town of Kyburz, putting this community at risk.

Alternative 3 would have the same effects as Alternative 2 because treatments would be discontinuous and would have little, if any, effect on the fuels and their development over time.

Fire history shows that the area would likely experience a disturbance in the form of a large fire within the next 25 years. Given the fuel conditions the effects of this fire in Alternatives 2 and 3 would be stand replacing. These circumstances could allow shrub stages to persist indefinitely

Future climate change scenarios of increased length and severity of fire seasons may result in a need for additional fuels treatments in the project area, beyond the timeline and scope of this FEIS.

**Vegetation Management** – We have added a Climate Change section to the FEIS (Chapter 3) addressing reforestation, insect and diseases, and precipitation based on information in the reviewed papers.

**Commentor: Steve Brink, California Forestry Association**

CFA supports the proposed action of this project.

Response: Thank you for your support.

It would be helpful if there was a table with some text describing:

- 1) How much of the 7,560 acres is productive forest land.
- 2) How much you intend to reforest into conifer and how much into oak.
- 3) Any acres that you are not going to reforest and why.

Response: Based on the Eldorado National Forest GIS Existing Vegetation Layer, about 7,325 acres are classified as productive forest site. The remaining acres are classified as non-forest type (such as transportation, barren, or urban) or non-productive forest site. These areas are often small inclusions within a larger area of productive forest site. Information describing proposed reforestation activities on federal lands has been added to the FEIS (Appendix B, Table B-3).

**Commentor: California Forestry Challenge ( 18 teams)**

Responses to a problem set from 18 teams from the California Forestry Challenge. The problem set contained three alternatives to analyze. These alternatives generally correspond with the three alternatives in the Freds Fire Reforestation Draft EIS. Their comments are summarized below.

Sixteen teams supported herbicide treatments as in Alternative One, the proposed action, although several suggested modifications related to planting acres, planting stock, and timing.

“Our first suggestion would be to use the Alternative 1 suggestion.”

“We support Alternative 1 for the Freds Fire restoration because the results seem effective. We analyzed the Cleveland fire plots and how the land and trees progress through the years.”

“After reviewing all the sites. We have seen what the effects of using separate methods of reforestation have done and what the long term effects are. Now seeing this has made us believe the best action to take would be alternative One...”

“We want to do ground application of the herbicides because of more accurate application.”

“We also propose that you use herbicides when planting the trees...”

Response: Thank you for your support.

Response: A non chemical alternative (Alternative 3) was analyzed in detail. The effects of chemical treatments on water systems and the ecosystem were analyzed under Alternative 1.

One team suggested using controlled fire in thirty years to control fuels.

Response: Treatments commencing in thirty years are beyond the scope of this EIS. Future treatments would be analyzed under NEPA, based on conditions at that time.

Several teams suggested planting differing amounts of acres, ranging from 2,700 acres to 3,475 acres.

“No reforestation along Highway 50.”

“You should plant only on 2,700 acres to save money on trees and put toward herbicide treatments.”

“We believe replanting 3,000 of the 3,800 acres, and leaving 800 to naturally regrow and be used as snag retention areas.”

Response: Alternative one would reforest about 3,320 acres in the burn area. Reductions from this acreage would not meet the purpose and need to reestablish a forested landscape.

Several teams suggested using precommercial thinning in the future.

Response: Masticating excess trees, in conjunction with fuel treatments, was dropped from the action alternatives between scoping and the Draft EIS because conditions into the future are speculative. A statement has been added to Chapter 2 of the FEIS (Alternatives Considered) to reflect this minor change. Future treatments, such as precommercial thinning, would be analyzed under a NEPA analysis based on conditions at that time.

Several teams suggested using volunteer labor to complete some of the treatments or using an “adopt a tree” type program to offset treatment costs.

Response: Individuals can volunteer on the Eldorado National Forest as we have an active volunteer program working on various projects on the Forest. While this can reduce costs, it does not affect the effects analysis for most resources. The Forest Service accepts donations for tree planting through the Penny Pines program. Additionally, grants for reforestation from organizations are also used to offset reforestation costs.